

Microcarpaea agonis (Scrophulariaceae), a new species from south-eastern Queensland

A.R. Bean

Summary

Bean, A.R. (1997). *Microcarpaea agonis* (Scrophulariaceae), a new species from south-eastern Queensland. *Austrobaileya* 5(1): 149–151. A new species in Scrophulariaceae, *Microcarpaea agonis* A.R.Bean, is described and illustrated. It is compared to *M. minima* and its conservation status is discussed.

Keywords: *Microcarpaea*, Scrophulariaceae, *Microcarpaea agonis*, Queensland, Australian flora.

A.R.Bean. Queensland Herbarium, Meiers Road, Indooroopilly, Queensland, 4068 Australia

Introduction

The genus *Microcarpaea* was erected by Robert Brown in 1810, with the single species *M. muscosa*. This name is illegitimate, as it is based on *Paederota minima* J.König ex Retz. The necessary combination *Microcarpaea minima* was made by E. Merrill in 1912. *Microcarpaea* has been until now, recognised to be a monotypic genus. Several other names

have been published under *Microcarpaea*, but these are all referable to other genera (Bentham 1869, Merrill 1923). Barker (1981) suggested that *Peplidium* Delile should be merged with *Microcarpaea*, but later (Barker 1990) he advocated the retention of both genera, because of the different pollen morphology possessed by the two groups.

Taxonomy

Key to *Microcarpaea* species

- Leaves linear, 5–9 mm long, 0.3–0.5 mm wide; calyx tube 1.3–1.7 mm long, unribbed or only faintly ribbed; calyx teeth green **M. agonis**
Leaves elliptical, 2.5–5 mm long, 0.7–1.5 mm wide; calyx tube 2.2–2.8 mm long, prominently ribbed; calyx teeth grey to brown **M. minima**

***Microcarpaea agonis* A.R.Bean sp. nov.**, affinis *M. minima* autem calycis tubo brevioris latioris leviter nervato vel enervato, calycis dentibus viridibus, foliis linearibus 5–9 mm longis differt. **Typus:** Queensland. DARLING DOWNS DISTRICT: (exact locality withheld), S.F. 235, W of Milmeran, 28 February 1996, A.R.Bean 9994 (holo: BRI; iso: AD, MEL, distribuendi).

Herb, terrestrial, annual, to 5 cm high and 10 cm wide; stems angular, glabrous. Leaves opposite, connected across nodes, linear, 5.0–9.0 × 0.3–0.5 mm, sessile, glabrous, striate, apex obtuse. Flowers solitary, axillary, bracteoles absent, pedicels absent or up to 0.3 mm long. Calyx tube ovoid, 1.4–1.7 × 1.0–1.2 mm, white, unribbed or weakly ribbed, with sparse indumentum of patent eglandular hairs; calyx teeth 5, deltate, c. 0.7 × 0.5 mm, green, slightly thickened near the middle, recurved in fruiting material, margins ciliate. Corolla tube c. 3 mm long, glabrous, slightly exerted from calyx tube, 2-lipped; upper lip scarcely bilobed or unlobed,

lower lip 3-lobed, mid-lobe slightly longer than lateral lobes, obtuse, margins ciliate. Stamens 2, fertile, epipetalous. Style 1, stigma expanded. Ovary 2-locular, ovules numerous, attached to a central placenta. Fruits ovoid, c. 1.0×1.0 mm, capsular, 2-locular, completely enclosed by calyx tube. Seeds ellipsoidal, yellowish, c. 0.3 mm long, longitudinally striate. Fig. 1.

Specimens examined: see type

Distribution and habitat: *M. agonis* is currently known only from the type locality. It was found on the margins of an *Eleocharis-Cyperus* dominated seasonal swamp, fringed by *Eucalyptus chloroclada* (Blakely) L.A.S. Johnson & K.D. Hill, in grey clay-loam soil. Some associated species are *Rotala mexicana* Cham. & Schltldl., *R. occultiflora* Koehne, *Cyperus difformis* L. and *Glossostigma diandrum* (L.) Kuntze.

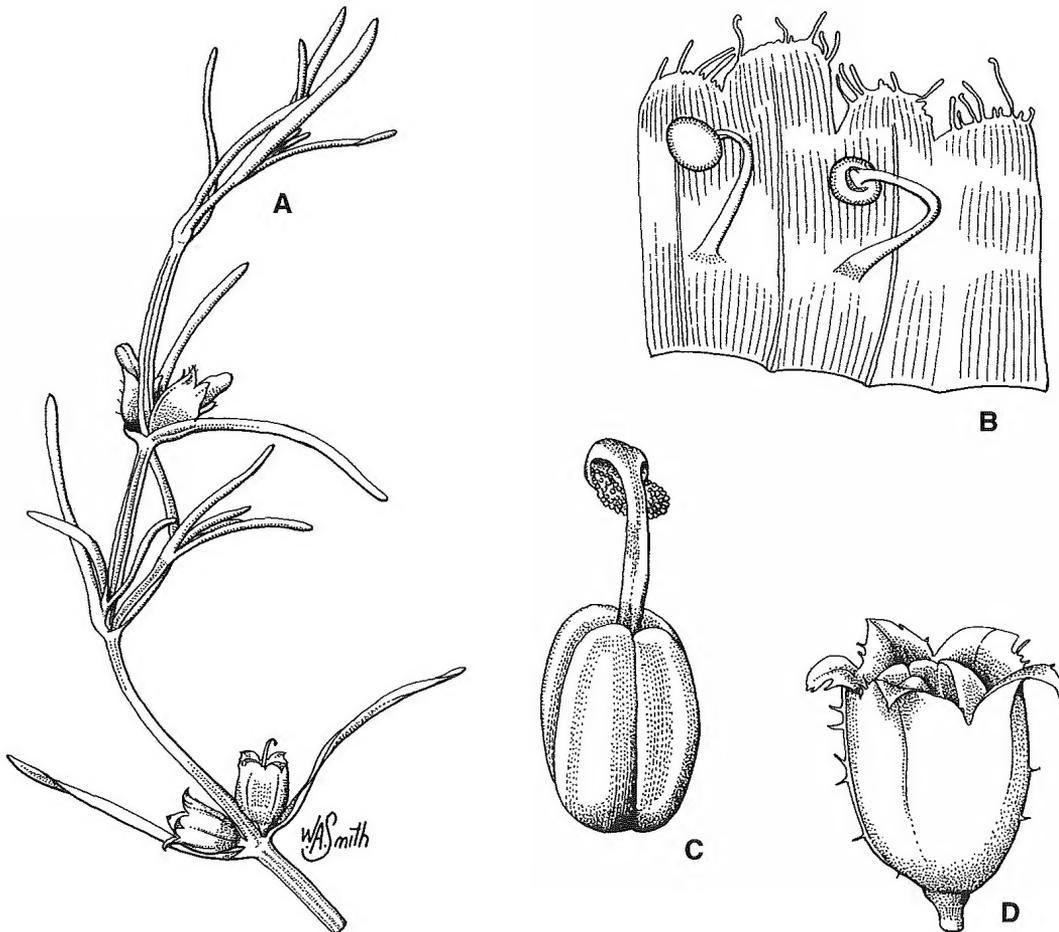


Fig. 1. *Microcarpaea agonis*. A. fertile branchlet $\times 4$. B. corolla and stamens $\times 32$. C. style and developing capsule $\times 32$. D. fruit $\times 16$. All from *Bean 9994*.

Phenology: Both flowers and fruits are present on the type specimen which was collected in February.

Notes: The new species is closely allied to *M. minima* in size and form, and they share the solitary axillary inflorescence with the flowers sessile or nearly so. *M. agonis* differs by its linear leaves 5.0–9.0 mm long (2.5–5.0 mm long for *M. minima*) and 0.3–0.5 mm wide (0.7–1.5 mm wide for *M. minima*), the shorter calyx tube which is unribbed or only faintly ribbed, and the green calyx teeth.

The distributions of *M. minima* and *M. agonis* are disjunct. *M. minima* is widespread, with occurrences in southern China, Japan, Indochina, Malesia and northern Australia. The type of *M. minima* was collected by Robert Brown in 1802 at Shoalwater Bay on the central Queensland coast, but it has not been recollected at or near the type locality. All subsequent Queensland collections have come from the Atherton Tableland or further north.

M. agonis occurs at c. 28° S latitude, some 600 km south of Shoalwater Bay, and 1300 km from the Atherton Tableland.

Conservation status: While it is unwise to make statements about the rarity of small annual plants, this species appears to be truly rare. No other specimens of it could be located in the Queensland Herbarium, despite a search through specimens of many genera in Scrophulariaceae, and even some genera in Rubiaceae and Lythraceae. *M. agonis* has not been found in some nearby areas which have been comprehensively botanised. Lake Broadwater (c. 75 km to the north) has been studied closely (Ballingall 1988). The wetland flora of the Chinchilla area (c. 130 km to the north) has been well catalogued and vouchered, largely through the efforts of local residents G. Lithgow and V. Hando (Hando 1988). The flora of the swamp at the type locality of *M. agonis* is unusual, as it contains tropical species which occur there as outliers, notably *Rotala mexicana* and *R. occulitiflora*, neither of which has previously been recorded for the Darling Downs Pastoral District. Hence there is some reason to predict a small geographical range and population size for the species.

The risk category for *Microcarpaea agonis* according to the criteria of Chalson & Keith (1995) is 'critical' (criteria A, B1, B2, D). The species is known only from the type population, where approximately ten plants were observed. *M. agonis* is under threat from grazing, roadworks and trampling by cattle. The author has searched for *M. agonis* around other nearby swamps, but without success.

The recommended conservation status for this species as defined by the *Queensland Nature Conservation Act 1992* is 'endangered'.

Etymology: The specific epithet is from the Greek *a* - without, and *gonia* - angled, and refers to the fruits.

Acknowledgements

I wish to thank David Halford for helpful discussions, Les Pedley for the Latin diagnosis, and Will Smith for the illustrations.

References

- BALLINGALL, M.E. (1988). Flowering Plants. in G.Scott (ed.), *Lake Broadwater - The Natural History of an Inland Lake and its Environs*. pp. 67–93. Toowoomba: Darling Downs Institute Press.
- BARKER, W.R. (1981). Scrophulariaceae. In J.P. Jessop (ed.), *Flora of Central Australia* pp. 326–334. Reed: Sydney.
- (1990). New taxa, Names and Combinations in *Lindernia*, *Peplidium*, *Stemodia* and *Striga* (Scrophulariaceae) mainly of the Kimberley region, Western Australia. *Journal of the Adelaide Botanic Gardens* 13: 79–93.
- BENTHAM, G. (1869). Scrophulariaceae. In *Flora Australiensis* 4: 470–523. London: L. Reeve & Co.
- CHALSON, J.M. & KEITH, D.A. (1995). *A Risk Assessment scheme for Vascular Plants: Pilot Application to the Flora of New South Wales*. Hurstville: National Parks and Wildlife Service.
- HANDO, V. (1988). Plants of Western Darling Downs, Barakula-Gurulmundi and South-west Burnett. pp. 96–171. In R. Hando (ed.), *Going Bush with Chinchilla Nats*. Chinchilla: Chinchilla Field Naturalists Club Inc.
- MERRILL, E.D. (1923). *An Enumeration of Philippine Flowering Plants, Volume 3*. Manila: Bureau of Printing